

DEC 13 2006

Application No.: 10/643,790

Docket No.: JCLA10858

**To the Drawings:**

The attached drawing sheet includes changes made to FIGs. 1-2. This sheet presenting both FIGs 1-2 replaces the original sheet including FIGs. 1-2. FIGs. 1-2 are designated by --Prior Art--.

Attachment: Replacement sheet and annotated sheet showing changes

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**REMARKS**

This is a full and timely response to the outstanding non-final Office Action mailed October 5, 2006. Reconsideration and allowance of the application and presently pending claims, as amended, are respectfully requested.

**1. Present Status of the Application**

Upon entry of the amendments in this response, claims 1-9 remain pending in the present application. More specifically, claims 3-4 are directly amended without prejudice, waiver, or disclaimer. These amendments are specifically described hereinafter. It is believed that the foregoing amendments add no new matter to the present application.

**2. Response to Objections to Claims**

The Examiner objected to claim 3 as being of informality to show the purpose/utility of the claim. Applicants have amended the preamble of claim 3, so as to show the purpose of claim 3, as suggested by the Examiner. In view of the aforementioned amendments, Applicants respectfully assert that the objections are no longer formal.

**3. Response to Claim Rejections Under 35 U.S.C. Section 103 (a)**

The Office Action rejected claims 1-2 and 4-7 under 35 U.S.C. 103(a) as being unpatentable over Suto (US 2003/0052744A1, "Suto" hereinafter) in view of Lansford (US 6,163,568, "Lansford" hereinafter) and further in view of Joshi (US 5,650,754, "Joshi"

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hereinafter). The Office Action further rejected claims 3 and 8 under 35 U.S.C. 103(a) as being unpatentable over Suto in view of Lansford and further in view of Joshi and Bomba (US 3,962,640, "Bomba" hereinafter).

The Examiner alleged that Suto had disclosed the switching varactor unit and the VCO core of claim 1 of the instant case, and considered the elements 121, 511 and 512 in FIG. 5 of Suto equivalent to the switching varactor unit of claim 1 of the instant case, and the elements 123 and 124 in FIG. 5 of Suto equivalent to the VCO core of claim 1 of the instant case.

Applicants respectfully submit that the elements 121, 511 and 512 in FIG. 5 of Suto are in fact not equivalent to the switching varactor of claim 1 of the present invention; neither are the elements 123 and 124 equivalent to the VCO core. In claim 1 of the invention it is stated, "wherein the switching varactor unit is coupled in parallel with the VCO core at the first output terminal and the second output terminal." In other words, the switching varactor unit is coupled in parallel to the two output terminals of the VCO core. Furthermore, it can be observed from FIG. 3 that the switching varactor unit 34 is coupled in parallel to the output terminals VCO\_1 and VCO\_2 of the VCO core 36.

As clearly shown in FIG. 5 of Suto, on the other hand, the elements 121, 511 and 512 (allegedly equivalent to the switching varactor unit of the instant case) are coupled in parallel to the input terminals of the element 124 (124a and 124b, allegedly equivalent to the VCO core of the instant case), and not coupled in parallel to the output terminal of the element 124 (124c). Therefore, Suto does not teach or disclose the technical features of the switching varactor unit and the VCO core of claim 1 as the Examiner indicated.

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Furthermore, the Examiner asserted that the two output terminals (the first and the second output terminals) were equivalent to 144a and 146a as shown in FIG. 2A of Joshi. After a careful study of Joshi, Applicants respectfully traverse the above assertion and submit that 140a in FIG. 2A of Joshi is only a power divider (or a buffer circuit). It is stated in column 6, lines 40-42 of the Joshi reference, "Power divider 140a can be chosen to match the impedance on input port 142a and output ports 144a and 146a for any known load", and in column 6, lines 23-25, "Buffer circuit 140 is adapted to conduct the VCO output signal from VCO 100 to output 144 and 146 to isolate external signals." In other words, although 144a and 144b in FIG. 2A are output terminals with different impedance, 140a is only used for isolating the influence of external signals. Hence, the output terminals 144a and 144b are not complementary to each other. Claim 1 of the present invention, on the other hand, clearly indicates, "a VCO core, having a first output terminal, a second output terminal complementary to the first output terminal", which means the signals on the two output terminals may be opposite in polarity. Therefore, the two output terminals of the VCO core of claim 1 of the instant case are not equivalent to 144a and 146a in FIG. 2A of Joshi, and Joshi does not disclose the technical features of these two output terminals of the VCO core.

In view of the above, neither Suto nor Joshi discloses the technical features of claim 1 of the instant case, and the currently pending claim 1 thus satisfies the non-obviousness requirements under 35 U.S.C. 103 (a).

Further, the Examiner considered Suto had already disclosed claim 2 of the present invention, and that "a plurality of diode pairs coupled in parallel" in claim 2 were equivalent to

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the elements 121, 511 and 512 as shown in FIG. 5 of Suto. Applicants respectfully submit that claim 2 has stated "wherein the diode pair has one common terminal coupled to the frequency-selection voltage" and that a plurality of diode pairs, 34a and 34b are clearly illustrated in FIG. 4, wherein each positive end of the diode pairs is coupled to node X. However, in Suto, not each cathode of the diodes in the elements 121, 511 and 512 as shown in FIG. 5 is coupled to the same node. It follows that Suto does not disclose the technical features of claim 2 of the instant case, and thus claim 2 should satisfy the provisions of 35 U.S.C. 103 (a) concerning the non-obviousness of a subject matter.

Since claim 1 of the present invention satisfies the non-obviousness requirements under 35 U.S.C. 103 (a), Applicants respectfully assert that claim 3 relating to a frequency shift keying (FSK) system using the technical features of claim 1 is in condition for allowance, and the dependent claims 4-7, which further define the FSK system recited in claim 3, are also in condition for allowance. Additionally, since claim 8 defines a method for the VCO recited in claim 1 and claim 1 fulfills the non-obviousness requirements under 35 U.S.C. 103 (a), claim 8 likewise fulfills the non-obviousness requirements under 35 U.S.C. 103 (a), and so does its dependent claim 9.

#### 4. Prior Art Made of Record

The prior art made of record has been considered, but is not believed to affect the patentability of the presently pending claims.

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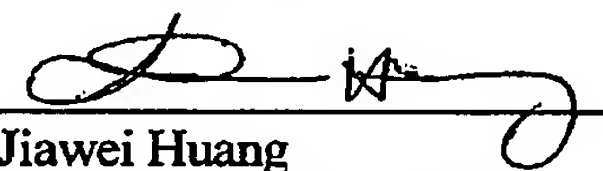
CONCLUSION

In light of the foregoing amendments and for at least the reasons set forth above, Applicants respectfully submit that all objections and/or rejections have been traversed, rendered moot, and/or accommodated, and that the now pending claims 1-9 are in condition for allowance. Favorable reconsideration and allowance of the present application and all pending claims are hereby courteously requested. If, in the opinion of the Examiner, a telephonic conference would expedite the examination of the above-identified application, the Examiner is invited to call the undersigned.

Date: 12/13/2006

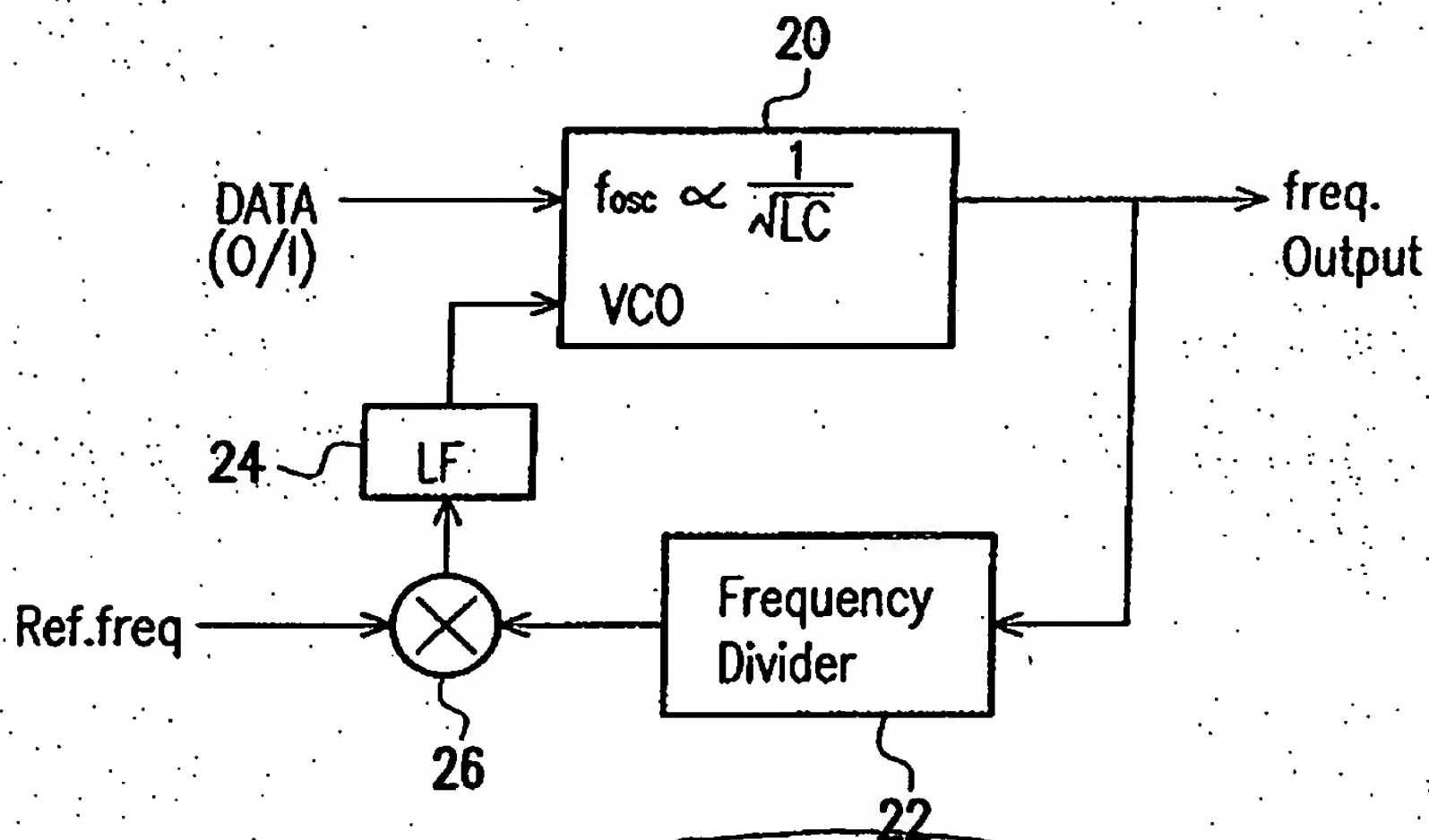
4 Venture, Suite 250  
Irvine, CA 92618  
Tel.: (949) 660-0761  
Fax: (949)-660-0809

Respectfully submitted,  
J.C. PATENTS

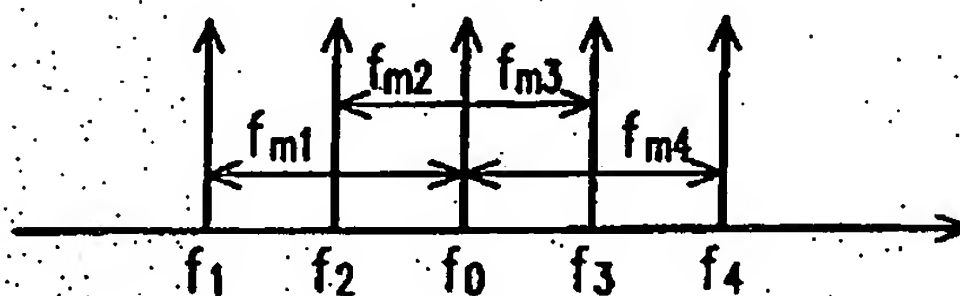
  
Jiawei Huang  
Registration No. 43,330

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**Annotated Marked-up drawing**



**FIG. 1 (PRIOR ART)**



**FIG. 2 (PRIOR ART)**

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